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# TRANSMITTAL FORM

*(to be used for all correspondence after initial filing)*

| | |
|---|---|
| Application Number | 10/050,937 |
| Filing Date | JANUARY 22, 2002 |
| First Named Inventor | JAN H. ZICHA |
| Art Unit | 3617 |
| Examiner Name | FRANTZ F. JULES |
| Attorney Docket Number | |

Total Number of Pages in This Submission

## ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☒ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☒ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☒ CD, Number of CD(s) 1
- ☐ After Allowance Communication to a Technology Center (TC)
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks



## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

| | |
|---|---|
| Firm or Individual | JAN HERMAN ZICHA |
| Signature | Jan H. Zicha |
| Date | APRIL 11, 2003 |

## CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on this date:

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Date: November 24, 2003

Subject: **Petition to Withdraw Holding of Abandonment**

First named inventor: Jan H. Zicha

Application No.: 10/050,937 Group Art Unit: 3617

Filed: 01/22/2002 Examiner: Frantz Jules

Title: Internally Resilient Tie for Railway Track

Gentlemen,

The above-identified application became abandoned on September 5, 2003 due to failure to respond to the Office Action dated January 12, 2003. However, my reply was hand-delivered to the United States Patent and Trademark Office on April 11, 2003, and did not apparently reached the Examiner. Please find enclosed the Transmittal Form stamped by the United States Patent and Trademark Office on that day. Also included are the following documents:

1. Re-submittal Letter Dated September 18, 2003 and Certified Mail Receipt.
2. Reply letter dated April 11, 2003. Five pages.
3. Supplemental Declaration for Utility or Design Patent Application (37 CFR 1.63). Two pages.
4. Corrected Specification. Twelve pages.
5. Corrected Drawings. Six pages.

The theoretical reference was submitted on compact discs on April 11, and again on September 18, 2003. Another copy is available per your request.

Since the submittal of the above documents was made in a timely manner, the holding of abandonment due to the failure to respond to an office action should be withdrawn.

Very Respectfully,

Jan H. Zicha

Jan H. Zicha

United States Patent and Trademark Office
Washington DC 20231



Date: September 18, 2003

Subject: Application No. 10/050,937, Internally Resilient Tie for Railway Track,
Re-submittal of Documents Dated April 11, 2003

Gentlemen,

The Notice of Abandonment dated September 5, 2003 is indicative of a loss of my documents submitted in person on April 11, 2003, in reply to the Office Action dated January 12, 2003. Please find enclosed another set of the following documents:

1. Reply letter dated April 11, 2003. Five pages.
2. Transmittal form stamped by the United States Patent and Trademark Office on April 11, 2003. One page.
3. Supplemental Declaration for Utility or Design Patent Application (37 CFR 1.63). Two pages.
4. Corrected Specification. Twelve pages.
5. Drawings. Six pages.
6. One CD including theoretical reference

Sincerely Yours,

Jan H. Zicha

Jan H. Zicha

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Mr. Frantz F. Jules

Examiner

United States Patent and Trademark Office

Washington DC 20231



Date: April 11, 2003

Subject: Application No. 10/050,937, Internally Resilient Tie for Railway Track

Dear Mr. Jules,

Enclosed are corrected Specification, Drawings and Supplemental Declaration of the patent application No. 10/050,937 in reply to Office Action dated January 12, 2003.

The deficiencies described on pages 2 thru 11, top page, of your correspondence dated January 2003 have been corrected and supplemental information included in the revised version. The functional aspects of the invention were moved to the Background and Brief Description of Invention sections of the application. The dynamic aspects of mechanical action of the internally resilient tie mentioned in the original application are expanded in its enclosed revision because they are essential to the invention and constitute essential improvement over the present state of art. The revised text of application is restricted to ballasted track because its ballastless form constitutes prior art.

The deficiencies listed on pages 2 through 11 top of your correspondence dated January 12, 2003, have been corrected. The statements concerning the rejections based on stated

instances of non-compliance with the law 35 USC $ 103 and the rule M.P.E.P Section 2142 are opposed on the following grounds:

1. The invention possesses improved properties "not expected by prior art" in compliance with M.P.E.P. Section 2142. While similarly looking devices that incorporate blocks inside ties were patented previously, they were intended to add only constant and static elasticity to the track supporting system. In order to make these devices usable in a contemporary ballasted track, they must reflect dynamic properties of track/train interaction and be adjustable to compensate for variations within the subgrade and subsoils of the track as described in the revised Background of the Invention. Proper dimensioning and selection of materials for internally resilient ties to be used successfully in ballasted track require advanced design process that is not a part of prior art and is not obvious to one of ordinary skill in the art. As evidence, the report DTFR 53-00-P-00377, Ugrading Track and Roadbed for High Speed Rail Operations, authored by myself, submitted to Federal Railroad Administration on January 30, 2001, after the original submittal of application for provisional patent titled Resilient Ties for Railway Track, is enclosed in electronic form on a CD disk. This report is currently under review at Voelpe Center and has not been published to date. The report includes theory and examples of analyses descriptive of the general dynamic theory of railway track and its relevant special applications, none of which has been developed as a part of work on the referred federally sponsored research report but existed previously.

2. Patentability over Sonneville and Vanohacker

Sonneville's Low Vibration Track is properly dynamically designed. It has several times higher longevity than any other type of track and requires very little maintenance. However, it is restricted to ballastless track while it is never used and cannot be used in a ballasted track as described in the revised Background of the Invention. Vanohacker's rail fastener is very different, does not introduce the desirable mass of sufficient magnitude into the dynamic track train interaction diagram which is depicted in added Fig.6, and closely resembles previous fasteners broadly utilized in ballastless track applications in Holland, Germany, Austria, Czech Republic, and Philadelphia in the USA for last four decades. Installations of Vanohacker's fasteners in ballasted track are unknown. Experience with these fasteners, and the demands of contemporary railway operations reflected in specifications of successful railroads, such as specifications of Euro-Tunnel, 1989, indicate that the elastomer utilized by Vanohacker would be either too soft to endure high frequency vibrations that reduce longevity of such elastomers in a railway track, or too stiff to significantly reduce the spread of low frequency vibrations that are damaging to the track and that are also environmentally objectionable. Dampening of this kind of devices is usually negligible in comparison with the extraordinary dampening capacity of Sonneville's LVT system which is a key parameter responsible for the LVT's success. In a contrary, intense maintenance of fasteners similar to the one of Vanohacker is a daily occurrence inherent to prior art. It is not clear how a mixture of these two dissimilar devices would make the concept of internally resilient ties obvious.

3. Mc Calum's device is interesting from its historical point of view. However, its block is too small to offer sufficient reduction of kinetic energy before it reaches its vertical elastic components while no lateral resilience exists. In the absence of a stiff railpad, its elastic members will be likely destroyed by high frequency vibrations from contemporary trains. Lateral dynamic activities will wear the vertical interfaces in a short time so that gauge of the rail would not be maintainable. The similarity and intended purpose of Mc Calum's device are far remote to the ones of internally resilient ties. Mc Calum's device is unique and never seen in railroad practice. It is hardly known to "one of ordinary skill in the art" to view it in a connection with Sonneville's and Vonahacker's devices to make the concept of internally resilient ties obvious.

4. J. McCourt's device includes wooden blocks that are too small and light to make a difference in the dynamic track/train interaction diagram. The blocks cannot be enlarged due to the utilized round rail fasteners that also restrict the movement of blocks that is needed for absorption of kinetic energy of vibrations should this device was dynamically loaded by contemporary trains. In the absence of an elastomeric rail pad, this device offers mere substitution of rail pads by wooden blocks. It is apparently a long time forgotten predecessor of standard rail pads. Its similarity and intended purpose are far remote to the ones of internally resilient ties. J. McCourt's device is unique and never seen in railroad practice. It is hardly

known to "one of ordinary skill in the art" to view it in a connection with Sonneville's LVT track to make the concept of internally resilient ties obvious.

5. The construction of a new high speed rail line in Germany between Frankfurt and Koln am Rein, as well as upgrades of existing lines for high speed operations worldwide involve costly replacements of soils in ten to fifteen feet depths, or construction of embankments in otherwise good quality soil areas to ensure dynamic uniformity of the subgrade and subsoils of the track foundation wherever the underlaying soils vary. Attempts to achieve uniformity of the overall dynamic response of ballasted track at rail pads have been made and did not work. Should the concept of internally resilient ties was obvious, it would be already in use saving time and capital investment costs on high speed rail projects.

Sincerely Yours,

Jan H. Zicha

Jan H. Zicha, P.E.